

Claim Amendment Mark-Ups for Amendment/Response of December 19, 2005

1. (Currently Amended) A method comprising:
applying a first current pulse having a first current level to a strip line of a magneto resistive memory cell; and
applying a second current pulse having a second current level to the strip line of the magneto resistive memory cell, wherein the second current level is higher than the first current level;
wherein the first magnetic field failed to write a desired value to the magneto resistive memory cell, wherein the second magnetic field is stronger than the first magnetic field and wherein the magneto resistive memory cell is one of a plurality of magneto resistive memory cells arrayed with a plurality of rows and a plurality of columns; and
wherein the strip line is one of a digit line for a plurality of magneto resistive memory cells, a row line for a plurality of magneto resistive memory cells, a bit line for a plurality of magneto resistive memory cells, or a column line for a plurality of magneto resistive memory cells.
2. – 9. (Canceled)
10. (Currently Amended) The method, as recited in Claim 42, wherein the applying the first magnetic field occurs only if the stored value is not in a desired state.

11. (Currently Amended) The method, as recited in Claim 42, wherein applying the first magnetic field occurs during system test, the method further comprising:
determining that the first magnetic field is not sufficient to reliably write the desired value; and
storing a result of the determination such that subsequent applications of magnetic fields to the magneto resistive memory cell utilize a force level of the second magnetic field.
12. (Original) The method, as recited in Claim 11, wherein storing the result comprises setting a fuse.
13. (Original) The method, as recited in Claim 11, wherein storing the result comprises setting a memory bit.
14. (Original) The method, as recited in Claim 11, wherein storing the result comprises damaging a memory bit.
15. (Original) The method, as recited in Claim 11, wherein the subsequent applications of magnetic fields are applied to a row of magneto resistive memory cells.
16. (Original) The method, as recited in Claim 11, wherein the subsequent applications of magnetic fields are applied to a column of magneto resistive memory cells.
17. (Canceled)
18. (Canceled)
19. (Original) The method, as recited in Claim 1, wherein applying a first magnetic field comprises a toggle write mode.

20. (Original) The method, as recited in Claim 1, wherein applying a first magnetic field comprises a direct write mode.
21. (Original) The method, as recited in Claim 1, wherein applying a first magnetic field comprises a conventional write mode.
22. (Currently Amended) A method comprising:
applying a first magnetic field to a plurality of magneto resistive memory cells during system test ; and
determining that the first magnetic field is not sufficient to reliably write at least one of the plurality of memory cells; and
storing a result of the determination such that subsequent applications of magnetic fields to the select ones of the plurality of magneto resistive memory cells utilize a force level of a second magnetic field; and
applying the a second magnetic field to select ones of the plurality of magneto resistive memory cells;
wherein the first magnetic field failed to write a desired value to at least one stored value in the select ones of the magneto resistive memory cells and wherein the second magnetic field is stronger than the first magnetic field;
wherein the plurality of magneto resistive memory cells are arranged in an array and the select ones of the plurality of magneto resistive memory cells are a row of the array; and
wherein the first magnetic field has a force less than a magnetic field necessary to reliably write the plurality of magneto resistive memory cells.
23. – 25. (Canceled)
26. (Previously Presented) The method, as recited in Claim 22, wherein storing the result comprises setting a fuse.
27. (Canceled)

28. (Previously Presented) The method, as recited in Claim 22, wherein storing the result comprises damaging a memory bit.
29. (Previously Presented) The method, as recited in Claim 22, wherein the subsequent applications of magnetic fields are applied to a row of the plurality of magneto resistive memory cells.
30. (Original) The method, as recited in Claim 29, wherein the subsequent applications of magnetic fields are applied to a column of the plurality of magneto resistive memory cells.
31. (Previously Presented) The method, as recited in Claim 22, wherein the subsequent applications of magnetic fields are applied to a column of the plurality of magneto resistive memory cells.
- 32.-36. (Canceled)
37. (Previously Presented) A method comprising:
applying a first magnetic field to a magneto resistive memory cell; and
applying a second magnetic field to the magneto resistive memory cell;
wherein the first magnetic field failed to write a desired value to the magneto resistive memory cell, wherein the second magnetic field is stronger than the first magnetic field, wherein the magneto resistive memory cell is one of a plurality of magneto resistive memory cells arrayed with a plurality of rows and a plurality of columns, and wherein applying the first magnetic field comprises a writing mode consisting from the group of a toggle write mode, a direct write mode and a conventional write mode.
38. (Previously Presented) The method, as recited in Claim 37, wherein a first magnetic field is applied utilizing a toggle write mode.

39. (Previously Presented) The method, as recited in Claim 37, wherein a first magnetic field is applied utilizing a direct write mode.

40. (Previously Presented) The method, as recited in Claim 37, wherein a first magnetic field is applied utilizing a conventional write mode.

41. (New) A method comprising:

applying a first current pulse having a first current level to a magneto resistive memory cell, wherein the first current level is less than a current level necessary to switch every stored value in a plurality of magneto resistive memory cells; and
applying a second current pulse having a second current level to the magneto resistive memory cell, wherein the second current level is higher than the first current level;

wherein the first magnetic field failed to write a desired value to the magneto resistive memory cell, wherein the second magnetic field is stronger than the first magnetic field and wherein the magneto resistive memory cell is one of a plurality of magneto resistive memory cells arrayed with a plurality of rows and a plurality of columns.

42. (New) A method comprising:

applying a first magnetic field to a magneto resistive memory cell; and
applying a second magnetic field to the magneto resistive memory cell;
performing a read of the magneto resistive memory cell to determine the stored value prior to applying the first magnetic field; and
performing another read of the magneto resistive memory cell after applying the first magnetic field;

wherein the first magnetic field failed to write a desired value to the magneto resistive memory cell, wherein the second magnetic field is stronger than the first magnetic field and wherein the magneto resistive memory cell is one of a plurality of magneto resistive memory cells arrayed with a plurality of rows and a plurality of columns.

43. (New) A method comprising:

applying a first magnetic field to a plurality of magneto resistive memory cells during system test ; and

determining that the first magnetic field is not sufficient to reliably write at least one of the plurality of memory cells; and

storing a result of the determination such that subsequent applications of magnetic fields to the select ones of the plurality of magneto resistive memory cells utilize a force level of a second magnetic field, wherein storing the result comprises setting a memory bit; and

applying the a second magnetic field to select ones of the plurality of magneto resistive memory cells;

wherein the first magnetic field failed to write a desired value to at least one stored value in the select ones of the magneto resistive memory cells and wherein the second magnetic field is stronger than the first magnetic field.

44. (New) A method comprising:

applying a first current pulse having a first current level to a magneto resistive memory cell, wherein the first current level is less than six sigma above a mean switching current; and

applying a second current pulse having a second current level to the magneto resistive memory cell, wherein the second current level is higher than the first current level;

wherein the first magnetic field failed to write a desired value to the magneto resistive memory cell, wherein the second magnetic field is stronger than the first magnetic field and wherein the magneto resistive memory cell is one of a plurality of magneto resistive memory cells arrayed with a plurality of rows and a plurality of columns.

45. (New) A method comprising:

applying a first magnetic field to a magneto resistive memory cell; and

applying a second magnetic field to the magneto resistive memory cell;

wherein the first magnetic field failed to write a desired value to the magneto resistive memory cell, wherein the second magnetic field is stronger than the first magnetic field and wherein the magneto resistive memory cell is one of a plurality of magneto resistive memory cells arrayed with a plurality of rows and a plurality of columns; and

wherein a structure of the magneto resistive memory cell structure comprises a magneto resistive memory element adjacent to a bit strip line and a digit strip line; and wherein applying current pulses to at least one of the word strip line and the digit strip line causes a value to be stored in the magneto resistive memory cell.